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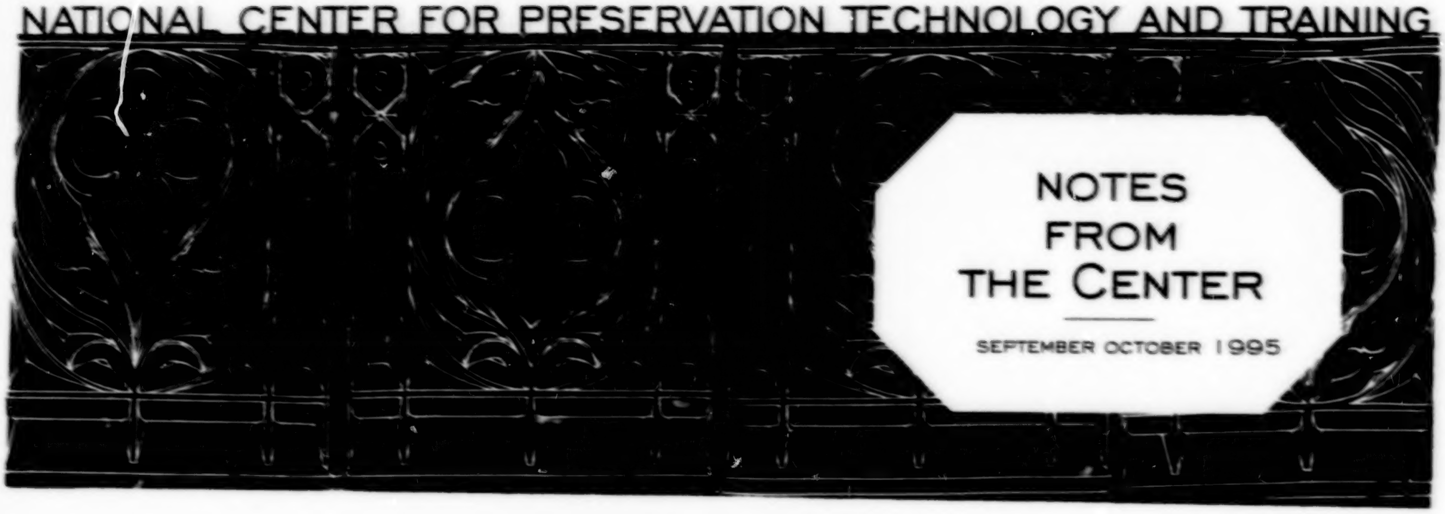
United States Department of the Interior
National Park Service

NCPTT

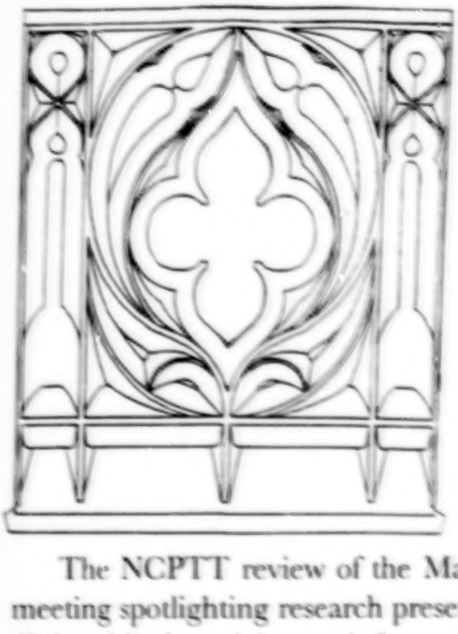
NATIONAL CENTER FOR PRESERVATION TECHNOLOGY AND TRAINING



NOTES FROM THE CENTER

SEPTEMBER OCTOBER 1995

FROM THE EDITOR



This edition of ***Notes from the Center*** features the NCPTT Materials Research Program and coincides with the Program's recent review. In January of this year, the Materials Research Program – formerly known as the Acid Rain Program – was transferred to the Center from the National Park Service's Preservation Assistance Division. The program focuses on the damaging effects of acid rain on materials used in the construction of buildings and monuments.

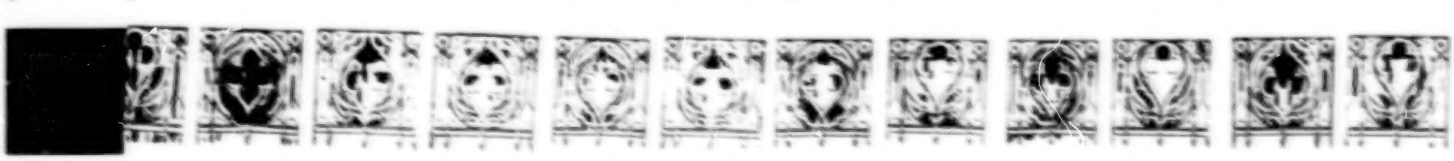
The NCPTT review of the Materials Research Program, a two-day meeting spotlighting research presentations and discussions with eighteen distinguished participants, is featured within this edition of *Notes*.

The Materials Research Program regular feature in *Notes* continues to provide up-to-date information on research funded by the program. This issue's article presents Dr. Cliff Davidson's study of the Cathedral of Learning in Pittsburgh.

Dr. John Meakin, Professor of Materials Science at the University of Delaware and Materials Research Program investigator, is profiled in these *Notes*.

In upcoming editions of *Notes*, the Center will report on future goals and directions for the Materials Research Program. We look forward to reporting new and exciting research from the Program in the year ahead.

The next edition of *Notes* will be devoted exclusively to the 1995 and 1996 Preservation Technology and Training Grants. Comments or items of interest for the following newsletter should be sent to the editor of those *Notes*, Mary Carroll.



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THE CENTER

The National Historic Preservation Act Amendments of 1992 established the **National Center for Preservation Technology and Training** at Northwestern State University of Louisiana in Natchitoches, Louisiana.

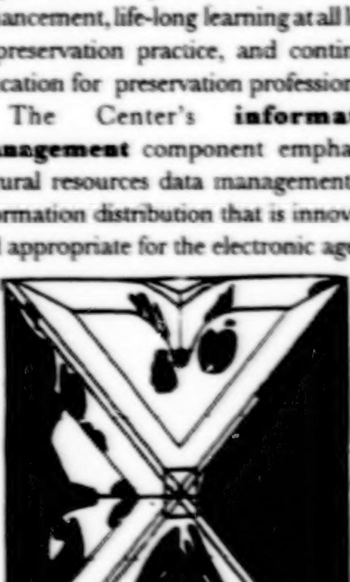
The Center and its advisory board – the **Preservation Technology and Training Board** – were organized throughout 1993 and 1994, and the Center's staff arrived in Natchitoches between October 1994 and January 1995.

The Center is an interdisciplinary effort by the **National Park Service** to advance the practice of historic preservation in the fields of archeology, historic architecture, landscapes, materials conservation, and history. The Center's mission is implemented through its three components – research, training, and information management.

The Center's **research** component emphasizes innovative, practical solutions to current preservation and conservation questions.

The Center's **training** component emphasizes preservation skills enhancement, life-long learning at all levels of preservation practice, and continuing education for preservation professionals.

The Center's **information management** component emphasizes cultural resources data management and information distribution that is innovative and appropriate for the electronic age.



PRESERVATION PROFILE

This feature is the fifth profile in an occasional series that highlights the careers of people who motivate and guide preservation practice in the United States.

John D. Meakin

John D. Meakin is a Professor of Mechanical Engineering and Materials Science and Associate Director of the Institute of Energy Conversion at the University of Delaware. Though he has been involved with the Materials Research Program and the investigation of bronze corrosion since 1988, he still considers himself an outsider to the field of preservation.

Born and educated in England, John received his Ph.D. in Metallurgy from Leeds University in 1957. He first came to the United States in 1958 as a visiting research associate at the Franklin Institute, Philadelphia, Pennsylvania. In 1974, he joined the University of Delaware and focused his research on the development of polycrystalline thin-film solar cells and renewable energy.

John first became involved in studying the effects of acid rain on outdoor bronze statues in 1988 when recruited by Dr. David L. Ames to participate in the *Hiker* Project. This project, initiated under the United States National Acid Precipitation Assessment Program and supported by the National Park Service, is a metallurgical and corrosion study of 52 replicas of the bronze *Hiker* statue made by Theo Alice Ruggles Kitson and cast by the Gorham Company between 1906 and 1965.

Initially, John focused on the analysis of corrosion scrapings from several of the statues. He quickly found that corrosion products did not allow any statistical discrimination among statues. With a background in electron microscopy, and transmission microscopy in particular, John developed the idea of molding key features on the statue and comparing surfaces as a way of documenting the corrosion. This led to John's current project under the Materials Research Program. Molds of nearly all 52 statues were taken, and are being examined by optical and scanning electron microscopy and profilometry. Each statue has been photo-documented as well. This approach has the potential for quantitatively monitoring local corrosion at selected sites over a period of years and also characterizing the impact of conservation treatments.

The Materials Research Program and the National Center are pleased to have an opportunity to draw on John's metallurgical expertise for the study of bronze corrosion.

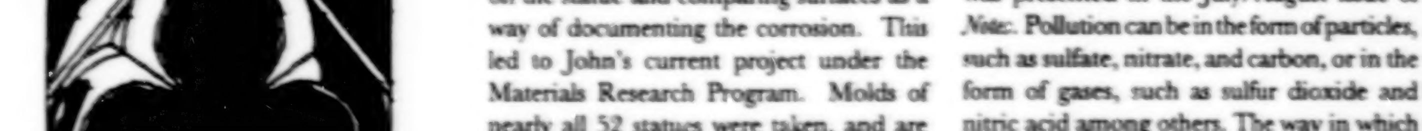
MATERIALS RESEARCH PROGRAM

This article in the Materials Research Program series highlights the research activities of ***Dr. Cliff Davidson*** *and his research group at* ***Carnegie Mellon University*** *(CMU). This work focuses on the* ***Cathedral of Learning*** *in Pittsburgh and the factors that influence the deposition of pollutants on surfaces of historic stone structures and changes in the soiling of historic buildings over time.*

Cliff Davidson is a Professor in the Department of Civil and Environmental Engineering and Engineering and Public Policy at CMU, where he has been on the faculty since 1977. He is also director of the Environmental Institute at CMU. He has conducted research on atmospheric transport of air pollutants, historical air pollution trends, indoor air pollutants, and wet and dry deposition of particles and gases from the atmosphere onto various surfaces.

Currently, the Materials Research Program emphasizes research on the effects of acid rain and air pollution on calcareous stone (stone that is composed of the mineral calcite). Limestone and marble, both virtually pure calcite, are used as building materials in the construction of buildings, monuments, and carved stone. It has been recognized in recent years that these building materials suffer damage from exposure to air pollution, and acid rain in particular.

Pollution can be deposited onto calcareous stones in two ways – dry or wet deposition. Wet deposition was discussed in the June issue of *Notes*, while dry deposition was presented in the July/August issue of *Notes*. Pollution can be in the form of particles, such as sulfate, nitrate, and carbon, or in the form of gases, such as sulfur dioxide and nitric acid among others. The way in which types of pollutants are delivered to the surface



and the resistance of the surface to pollutant deposition are important in predicting where damage is likely to occur on historic buildings and monuments. The delivery or transport of pollutants to the surface of stone can be affected by atmospheric and surface conditions. Atmospheric factors may include windspeed and direction, relative humidity, air and surface temperatures, and precipitation. Surface conditions include surface porosity and roughness.

The Cathedral of Learning provides an excellent field site for the study of pollutant deposition and soiling on an historic limestone building. The Cathedral is located on the campus of the University of Pittsburgh in an urban area with a long and varied history of air pollution. The Cathedral is a 41-story limestone academic building that was constructed between 1929 and 1937. Since then, the building has become soiled as a result of exposure to a variety of pollutants and has never been cleaned. Davidson's study focuses on understanding how these contaminants result in the soiling of the building.

Davidson's project has several objectives including identification of the key sources and chemical species of the pollutants, determination of the methods of transporting pollutants to the surface of the Cathedral, and documentation of changes in soiling patterns.

To identify key chemical species, a monitoring program was initiated in 1993 to quantitatively measure air concentrations of sulfate, nitrate, and carbon particles, and gaseous sulfur dioxide and nitric acid using filtering systems and subsequent elemental and organic analysis by thermal optical reflectance. Sulfur and nitrogen species were expected to have an effect on the integrity of the stone since they contribute to the formation of alteration crusts. Carbon species tend to become imbedded in those crusts and were considered responsible for the soiled appearance.

To study pollutant transport to the surface of the Cathedral, the overall deposition process is divided into three steps. In the first step, the pollutant must move from a free-flowing atmosphere into a sublayer of relatively dense air near the surface of the stone. In the second step, the pollutant must move through this dense air to arrive at the surface of the stone. The final step requires that the pollutant stick to the stone surface. With each step the pollutant encounters an associated resistance. Davidson's group has designed experiments that allow them to measure the overall resistance to pollution deposition and to determine the individual resistance for each step.

To document changes in the soiling patterns of the building, qualitative and semi-quantitative analysis of the soiling of architectural features have been applied. Sketches of the architectural features, such as quatrefoils and crosses, are reproduced. Students then annotate the soiling pattern they observe on the particular feature they are studying. Each sketch is then scanned into a computer and analyzed for the percent area soiled. This allows the researchers to identify areas of high and low soiling that may be correlated with various factors such as wind direction and pollutant emissions. Also, the study of archival photographs along with modern technical photography are being used to compare the extent and locations of soiling over several decades.

The results of these studies are being compiled using a geographical information system (GIS) in association with an Autocad drawing of the building that is currently underway. Preliminary results of the monitoring of pollutants indicate that airborne sulfur dioxide is the most significant pollutant contributing to the damage of the Cathedral. Sulfur dioxide is found in concentrations 5 times greater than sulfate particles and 10 times greater than nitrates or nitric acid. Moreover, the deposition velocity, a measure of the ability of the pollutant to attach to the stone surface, was 20 times greater for sulfur dioxide than for sulfate particles.

Results from studying the soiling patterns of the building indicate that the Cathedral appeared much more soiled or blackened previously than it does today. Historical data show that pollutant emissions have decreased substantially over the past thirty years, which may affect the condition and appearance of the Cathedral.

This work is continuing and includes pilot studies to look at estimates of stationary source emissions, traffic patterns and effects of vehicle emissions, carbon wash-off rates, and airflow patterns, among other factors.

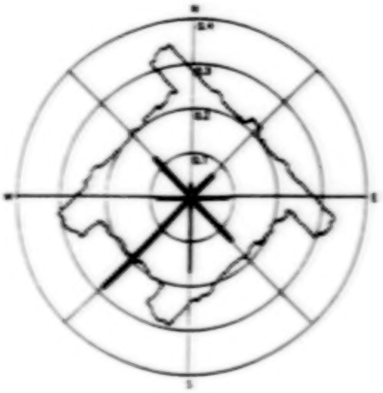
Davidson's work demonstrates the application of both simple and sophisticated techniques funded by the Materials Research Program to provide relevant information about the effects of air pollution on historic buildings.

For more information regarding this work, contact:

Dr. Cliff Davidson
412/268-2951
cdow@andrew.cmu.edu
Carnegie Mellon University
Department of Civil Engineering
Pittsburgh, PA 15250-7032

- Mary F. Striegel

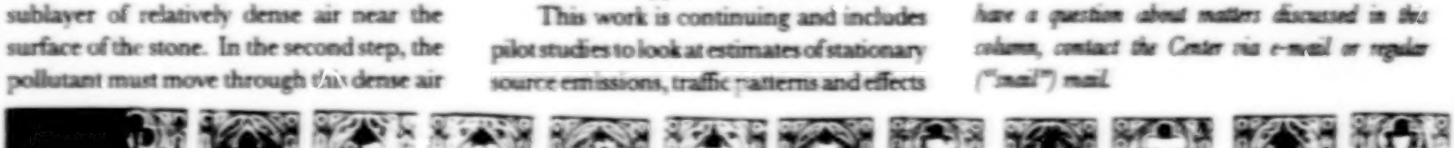
Meteorological Measurements



The diagram above is called a wind rose. It shows the prominent wind speed and wind direction that were monitored at the Cathedral of Learning between January and June of 1994.

THE INTERNET

This is the first in a regular series of columns on the Internet. This initial article describes the Internet and its history and discusses ways to get connected. Future articles will discuss communicating via the ***Internet****, how to find information on the Internet, how to disseminate information through the Internet, and interesting preservation-related Internet sites. If you have a suggestion for an Internet-related subject that you'd like to see discussed in this column or if you have a question about matters discussed in this column, contact the Center via e-mail or regular ("snail") mail.*



WHAT IS THE INTERNET?: The Internet, sometimes known as the Information Superhighway, is not a single entity. It is a massive computer network consisting of many (estimated at nearly 4,000) smaller networks that are located all over the world. There is no governing body for the Internet. No one person or company owns or runs the Internet. Standards are developed, resources are allocated, and technical issues are resolved by several volunteer organizations. Any network that can connect is part of the Internet. Any computer, whether mainframe, desktop or laptop, that is connected to any one of these networks is linked to the Internet as a whole.

HISTORY: The system now known as the Internet began during the 1960s in research by the **Advanced Research Projects Agency** (ARPA) in the Department of Defense. The research was aimed at finding a way to link various computer centers so that data could be shared by all. Because of the political atmosphere of the time, the primary concern was to create a network that would not be disrupted by nuclear attack. That is, if one part of the network were destroyed, the rest of the linked centers could continue to operate. The result of this research was **ARPAnet**, which connected the computer systems at four universities – Stanford University, University of California at Los Angeles, University of California at Santa Barbara, and University of Utah. Due to the way these computer systems communicated, if any one part of this network went down, the rest could continue to function.

As more networks, large and small, developed during the 1970s and 1980s, the demand grew to facilitate communication among networks. **NSFNET**, funded by the National Science Foundation and consisting of regional university networks connected to various interconnected supercomputing centers, was developed in the 1980s. At that point, any computer in any of the networks could communicate with any other linked computer. A wealth of data and information became available. Today not only universities are linked, but also private companies, government agencies, and organizations worldwide. During this process of development, the system came to be known as the Internet.

HOW TO GET CONNECTED: There are three basic things you need to connect to the Internet – a computer, a modem, and a service provider. Using communications software and telephone lines, the modem links your computer to the Internet via the service provider's computer. A service provider is an organization that provides the link to the other networks that make up the Internet. Service providers set up, maintain, and manage connections to the Internet.

Commercial service providers, such as America Online, Prodigy, or CompuServe, allow full or limited Internet access to subscribers, as well as access to their own information services. Subscribers to these large, nationwide companies pay at least a monthly charge and often hourly user fees or other charges for access to the Internet and the provider's information sources. In addition, if no local phone number is supplied for connection to the provider, long distance phone rates will apply for any online time. Smaller, local providers often provide Internet access only, and their fees may be less than those charged by national providers.

Educational institutions such as universities and community colleges nearly always provide full Internet access free to faculty, staff, and students. Private companies, government agencies, and other organizations may provide full or limited access to their employees. If you're not sure whether you have access through your workplace or an educational institution, ask your computer support staff. If you can't get connected that way, investigate local and nationwide commercial providers for the best prices for what you need.

ADDITIONAL READING: If you'd like to learn more about the Internet, there are many excellent source books available. Two that were used for this column are *The Whole Internet User's Guide & Catalog*, Second Edition, by Ed Krol, O'Reilly & Associates, Inc. and *The Internet Unleashed*, Foreword by Kevin Kelly, Sams Publishing.

- Mary S. Carroll

THE RECENT PAST

National Park and Heritage Area Established in Natchitoches Area

Natchitoches, LA

The Center is pleased to be joined in Natchitoches and at Northwestern State University by another National Park Service undertaking – Cane River Creole National Historical Park and Heritage Area – and its Acting Superintendent, Henry G. Law.

Established in 1714 as one of the oldest permanent settlements in the Louisiana Purchase territory, Natchitoches Parish includes an abundance of resources that represent various aspects of Creole culture. The **Cane River Creole National Historical Park** and the **Cane River National Heritage Area** were authorized by Congress on November 2, 1994 to preserve and interpret the broad continuum of Creole historical and cultural heritage located within the region.

Interpretive and educational programs on the history of the Cane River area will be the focus of the Cane River Creole National Historical Park. Additionally, the Park will assist in the preservation of historic sites along the Cane River. When fully operational the Park will comprise an interpretive visitor center complex serving the needs of the park and the heritage area; portions of Magnolia Plantation and Oakland Plantation; and other sites for historic preservation and interpretation purposes.

The larger Cane River National Heritage Area includes approximately one mile on both sides of the Cane River stretching from above Vienna Bend to below Cloutierville; properties within the Natchitoches National Historic Landmark District; Los Adaes, Fort Jesup, and Fort St. Jean Baptiste State Commemorative Areas; and the Kate Chopin House.

The heritage area receives direction and assistance in its management from a 19-member commission appointed by the Secretary of the Interior and representing the local community and business interests. Impaneled on August 5, 1995, the commissioners are: R. Raymond Arthur,

C. D. Brazzel, Ann Brittain, Kathleen M. Byrd, Amanda Chenault, Rufus Davis, Jr., Robert B. DeBlieux, Terry A. Delphin, Jr., James L. Durham, Sharon Gahagan, Betty Jones, Emery J. Jones, Mary J. Kelley, Wayne McCullen, Saidee W. Newell, Edward Ward, Jr., and Mary Lynn Wilkerson. A National Park Service representative serves in an ex officio capacity on the commission. Robert B. DeBlieux and Saidee W. Newell, both of Natchitoches, were elected as co-chairpersons of the commission.

For more information on the Park, heritage area, and the commission, contact Henry G. Law, Acting Superintendent at 318/357-4237.

Presentations

Statewide Partners Workshop

Raleigh, North Carolina

July 29

Mary Carroll was a guest speaker at the **Statewide Partners Workshop** in Raleigh sponsored by the **National Trust for Historic Preservation**. Workshop participants included representatives of statewide preservation organizations in California, Connecticut, Florida, Georgia, Indiana, Oregon, South Dakota, Michigan, Virginia, New York, North Carolina, and Pennsylvania. Participants discussed issues of membership development, fundraising, historic preservation advocacy, and public policy. Mary gave an overview of the Center and discussed the Internet, some basic definitions of software used on the Internet, how the Center uses the Internet, and how the statewides might benefit from Internet access.

Aesthetic and Economic Impacts of Air Pollution on our Cultural Heritage

Natchitoches, LA

August 17

Dr. John Meakin (see Preservation Profile in this edition of *Notes*) presented findings of corrosion studies of bronze replicas of the popular *Hiker* statue by Theodore Alice Ruggles Kitson for a Louisiana SOS! lecture in Natchitoches.

-Sarah Luster

Sarah is the Northern Coordinator of the Louisiana SOS! and organized the presentation.

Meetings

What are Appropriate Standards for The Indoor Environment?

New York

June 23

Mark Gilberg attended a one-day symposium sponsored by the **Conservation Center** of the **Institute of Fine Arts** at **New York University**, on the subject of climate control in museums, libraries and archives. The results of recent NCPTT-funded research involving the determination of allowable relative humidity fluctuations for the storage and display of museum objects were presented by scientists from the Smithsonian Institution. New environmental management tools were discussed including the use of isoperms for estimating environmental effects as well as improvements in the design and use of existing building heating and cooling systems. Case studies highlighting the experiences of the Canadian Conservation Institute, the Getty Conservation Institute and the National Archives also were presented.

Southeast Preservation Conference

Birmingham, Alabama

August 9-12

Greater Birmingham was the setting for bringing together SHPOffices, statewide organizations and African-American preservation organizations from throughout the Southeast. The conference was organized by the **Southern Regional Office** of the **National Trust for Historic Preservation**, with the **Alabama SHPOffice** and the **Birmingham Historical Society** as co-sponsors. John Robbins represented NCPTT, and the conference was an excellent opportunity to present the NCPTT's mission and programs to a wider audience.

Highlight sessions included a Statewides "retreat" – which afforded statewides, SHPOffices, the Trust and NCPTT a first-ever opportunity to discuss current activities and opportunities for collaborations , a status review of the draft *Public Housing Historic Context Report* in preparation by the National Conference of State Historic Preservation Officers, a presentation of the University of Georgia's *Your Town* program – with particular emphasis on how a Your Town workshop helped Montezuma, Georgia turn around a recent flood disaster by seizing the opportunity to revitalize its downtown , and an extended session on building broader support for preservation in African American communities.

As is usual with good conferences, all sessions merit extensive follow-up, and NCPTT is pleased to have had the opportunity to meet potential new partners. One excellent follow-up session will be held February 8-10, 1996 in Charleston: *Opening Doors* - The Southeastern Regional Conference on African American Historic Preservation (for more information, see The Near Future column in this edition of *Notes*).

African American Heritage Tourism in the Delta Region

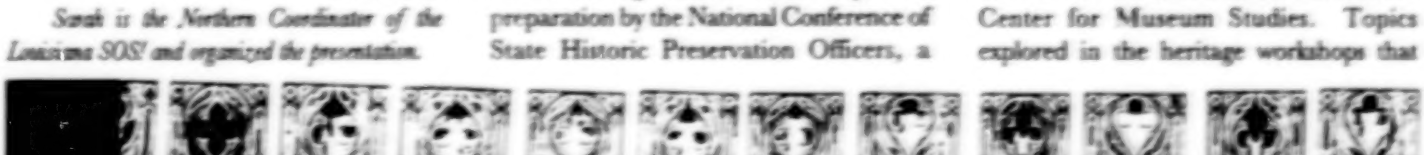
Baton Rouge, Louisiana

August 14-16

Fran Gale attended the first region-wide conference addressing African American heritage tourism, which was sponsored by the National Park Service in cooperation with the Lower Mississippi Delta Development Center. The conference was held at Southern University, the parent campus for the largest predominately black university system in the United States.

The National Park Service sponsored the conference as part of its current study of African American tourism in the Lower Mississippi Delta region. The rich cultural heritage of this seven-state region was recognized by Congress in late 1994 with the Lower Mississippi Delta Region Initiatives. Workshop participants included representatives from museums, heritage sites, historically black colleges and universities, economic development offices, Federal agencies, state tourism offices, elected officials, and corporate and private financial sponsors.

Keynote speakers for the opening session on Tuesday included Cheryl Brown Henderson, President of the Brown Foundation for Educational Equity, Excellence and Research, and Dr. Rex Ellis, Director of the Smithsonian Institution's Center for Museum Studies. Topics explored in the heritage workshops that



followed included literature, music, folklore, cultural traditions, arts, sciences, education, politics, and civil rights. Identifying and cataloging the people, sites, and events that characterize black history throughout the seven states will enhance a visitors' understanding of African American heritage and its influence in the Delta.

The keynote speaker for Wednesday's general session was Mississippi State Senator John Horhn. A wide range of topics – including marketing, regional grant opportunities, and archives and information systems – was covered in the Wednesday workshops on tourism and preservation. Many of the workshop participants will continue to work to develop a coordinated African American heritage tourism initiative in the Delta.

Review of the Materials Research Program

The National Center convened a two-day meeting of leading experts in the field of preservation technology for the review of the NCPTT Materials Research Program. The meeting was held at Northwestern State University on August 16-17, 1995. The meeting was held to evaluate the eight research projects currently funded and supervised by the program, and to plan future research goals for the program.

The Materials Research Program is the National Park Service's research contribution to the National Acid Precipitation Assessment Program and focuses on the damaging effects of acid rain on cultural resources. The Materials Research Program emphasizes the development of predictive models for understanding the destructive effects of air pollution on limestone, marble, and bronze materials found in monuments and buildings.

The meeting was chaired by **Carolyn Rose**, Deputy Director of the Department of Anthropology and Senior Conservator at the National Museum of Natural History, Smithsonian Institution, and PTTBoard member. Other review panel members included –

Robert Baboian, Head of the Electrochemical and Corrosion Laboratory at Texas Instruments
Norbert Baer, Professor of Conservation at New York University
Elena Charola, chemist and conservation consultant
Fran Gale, NCPTT Training Coordinator
Frank Preusser, conservation scientist
Chandra Reedy, Director of the Ph.D. program in Art Conservation at the University of Delaware, and
Michael Velbel, Professor of Geological Sciences at Michigan State University.

Principal Investigators represented at the meeting included –

Cliff Davidson, Carnegie Mellon University
Elaine McGee, United States Geological Survey
John D. Meakin, University of Delaware
Victor Mossotti, United States Geological Survey
Michael Reddy, United States Geological Survey, and
Karl Reimann, Argonne National Laboratory.

Observers from the National Park Service and NCPTT included –

Blaine Cliver, Chief of the Preservation Assistance Division in the National Park Service's Washington Office
Mark Gilberg, NCPTT Research Coordinator
John Robbins, NCPTT Executive Director and
Mary F. Striegel, NCPTT Research Associate, manager of the Materials Research Program, and meeting organizer.

The meeting program was divided into a day of research presentations and a day of discussions and review. Mary Striegel opened the meeting with an overview of the Materials Research Program. Mary discussed the relationship among the eight projects that include field tests, laboratory tests, and process modeling.

This presentation was followed by John Meakin's presentation, "Study of the Environmental Factors in the Corrosion of Bronze Monuments and Statues". This project is discussed more extensively under The Recent Past column in this edition of *Notes*.

Next were two presentations that centered on the results obtained from samples exposed at NAPAP test sites. Elaine McGee presented her petrographic observations of marble and limestone samples, as well as samples from the Merchant's Exchange and the Cathedral of Learning. McGee studies the changes in stone that has been exposed to air pollution using microscopic examination of alteration crusts found on its surface.

A battery of analytical tests, including color and recession measurements, weight change, and chemical analyses, were performed on limestone and marble samples exposed for various lengths of time at NAPAP test sites. The results of these tests and the implication of the results for the determination of dose response functions were reported by Karl Reimann.

Elliott Spiker's laboratory research on the dry deposition of pollutants to stone was presented by Victor Mossotti. Using a specially designed chamber under controlled conditions, Spiker determines the surface resistance of the stone to the deposition of pollutants. Stone surfaces that show high resistance are less affected by pollutants than stone surfaces which show low resistance.

The next presentation focused on the Cathedral of Learning. This field site is being documented by a research team led by Cliff Davidson. This project is covered in the Material Research Program article in this issue of *Notes*.

Michael Reddy presented his work on the modeling of damage to limestone by acid rain. Reddy studies and characterizes the ways that dry deposition of air pollutants damages limestone samples. Reddy's work recently was reviewed in the July/August *Notes*.

The final presentation of the day, by Victor Mossotti, centered on the use of a model that describes the decay of limestone and marble by wet deposition of pollutants.

Mossotti's work was featured in the June issue of *Notes*.

The second day of the meeting consisted of a series of working group discussions on future program goals and their implementation.

Among suggestions for short-term goals was an emphasis on publications for a variety of audiences. The effects of acid rain on materials used in monuments is important to managers and preservation practitioners as well as scientists and policy makers. The publication of program review papers for each of these audiences may prove valuable in the field.

Intermediate goals may include the organization of a "state of the art" conference to promote understanding of materials damage caused by acid rain, as well as the establishment of "state of the art" publications that assess ongoing research activities worldwide.

Long-term goals may include reevaluating the types of materials that need to be studied, with redirection of research efforts to focus on the development of treatment and strategies for the prevention of damage.

NCPTT Sponsors 1995 US/ICOMOS Internships

Within its mission to promote the development of preservation professionals, NCPTT currently is sponsoring four international internships in collaboration with the **US Committee of the International Council on Monuments and Sites** (**US/ICOMOS**).

International internships are an annual US/ICOMOS program directed by **Ellen Delage** of US/ICOMOS's Washington headquarters. This year, NCPTT is sponsoring two "outbound" American preservationists and two "inbound" preservation professionals.

Coleman Jordan is a graduate student in architecture at Clemson University. Mr. Jordan's internship is in Cape Coast, Ghana, where he will participate in architectural documentation projects co-sponsored by the ICOMOS National Committee of Ghana, the Mid-West Universities Consortium for International Activities, and the Ghana Museums and Monuments Board. Mr. Jordan will contribute to a survey of the historic core of Cape Coast, capital of the colonial Gold Coast until 1877.

Catherine Cassidy is an American PhD candidate in Civil Engineering at the University of Toronto whose graduate work has a special emphasis on historic preservation. Ms Cassidy's internship is in Istanbul, Turkey, where she will participate in architectural documentation projects co-sponsored by the ICOMOS National Committee of Turkey, the National Palaces Organization, and Yildiz Technical University. The National Palaces Organization's current documentation project focuses on Dolmabahçe Palace (1853).

Gabriela Brizuela is a Mexican preservation architect with advanced training in conservation and restoration at the Universidad Autonoma Metropolitana Unidad Xochimilco. Ms Brizuela's internship is in Santa Fe, New Mexico, as staff technical associate with Cornerstones Community Partnerships, assisting communities in northern New Mexico to conserve historic indigenous structures – primarily historic adobe churches.

Erbprem Vatcharangkul is a Thai archaeologist and chief of the Underwater Archeology section at Chantaburi, Thailand, an office within the Thai Fine Arts Department's Archeology Division. Mr. Vatcharangkul's internship is in Natchitoches, Louisiana, in the Archaeological Conservation Laboratory at Northwestern State University. The laboratory, under the direction of **Dr. Tommy Hailey**, is responsible for conserving artifacts retrieved from the excavation of the *USS Eastport* and the *Edward F. Dix*, superimposed wrecks of two ships that sank in the Red River near Montgomery, Louisiana, during the Civil War. This work will enhance Mr. Vatcharangkul's understanding of conservation techniques and technologies for conserving submerged objects – experience that may benefit Mr. Vatcharangkul's management of Thailand's 41 identified underwater archeological sites that date from the 16th century onward.

NCPTT-US/ICOMOS' 1995 internships are particularly appropriate to NCPTT's emphasis on innovation in historic preservation. With NCPTT's support, the 1995 US/ICOMOS internships include four firsts: the first US/ICOMOS exchange with Africa, the first intern received by the ICOMOS National Committee of Turkey, the first US/ICOMOS internship at a not-for-profit preservation organization in the US, and the first US/ICOMOS internship in underwater archeology.

NCPTT is pleased to work with Ms Delage and US/ICOMOS towards broadening interest and participation in preservation practice, and towards international exchanges of information, technologies and practitioners.

For more information about US/ICOMOS internship opportunities, contact Program Manager Ellen Delage at US/ICOMOS headquarters: 1600 H Street, NW, Washington, DC 20006; telephone 202/842-1866, facsimile 202/842-1861.

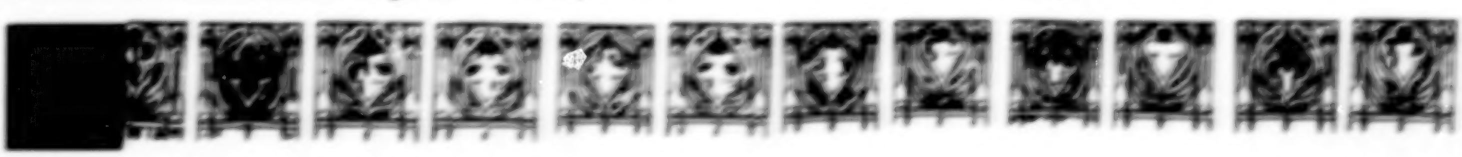
The Center Welcomes Intern

The Center welcomes its second intern, **Robert Smith**. Bob is a student in NSU's Division of Business in their Computer Information Systems program.

Bob will assist Mary Carroll with information management tasks at the Center including configuring and maintaining the Center's computer equipment and databases, updating the gopher, and helping staff with other computer and database jobs.

Bob is a welcome addition to the Center's staff and we are pleased to have him on board.

All illustrations for this edition of Notes were taken from the research of Dr. Cliff Davidson and his group at Carnegie Mellon University. The figures document soiling of quatrefoil or cross architectural elements found on the Cathedral of Learning in Pittsburgh.



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September 29-October 1

Preservation Weekend

Nacogdoches, Texas

Beginning in September, the Center will begin what we hope will become a series of **Preservation Weekends** at sites throughout the US. During these workshops, Center staff and preservation specialists will work with owners and managers of historic properties to enhance their skills in historic preservation.

The first preservation weekend is scheduled for **September 29-October 1, 1995**, in **Nacogdoches, Texas**. Co-sponsors for the Nacogdoches Preservation Weekend are the **Continuing Education Department** of **Stephen F. Austin State University** and the **Timber Framers' Guild of North America**.

Homeowners and managers of historic properties from the ArkLaTex region will learn from experts on purchasing, rehabilitating, and maintaining historic properties. Sessions will showcase the skills of craftsmen including timber framers and hardware and stained glass artisans. Participants will learn how to inspect historic properties and to determine original paint schemes. A special session on the use of computers in preservation will link these traditional skills to modern day technology. The workshop will conclude with a session "putting it all together" followed by a tour of historic properties in and around Nacogdoches. Call NCPTT Training Coordinator Fran Gale for additional information.

September-October

Louisiana *SOS!* Volunteer Training Workshops

Natchitoches	September 12, 1995
Shreveport	September 23, 1995
Alexandria	October 19, 1995
Monroe/ Ruston	TBA

Louisiana *SOS!* (*Save Outdoor Sculpture!*) is part of the national project designed to inventory and assess the condition of all publicly accessible outdoor sculpture in the United States. Public awareness about the importance of and need to preserve outdoor sculpture is the goal of *SOS!*. In Louisiana, *SOS!* is sponsored by NCPTT and Louisiana State University. To volunteer and to register for a fall training workshop please contact Louisiana *SOS!* coordinator Sarah Luster at the Center, or by e-mail lusters@alpha.nsula.edu.

February 8-10, 1996

***Opening Doors* – the Southeastern Regional Conference on African American Historic Preservation**

Charleston, South Carolina

This important conference will be a three-day meeting of expert advice, information sharing and networking in the growing field of African American historic preservation. Presentations and sessions will include the "how-tos" of historic preservation; archeology at African-American sites; finding funding for your project; neighborhood revitalization; African-American architecture; getting the community involved; and the preservation/tourism connection.

For more information write *Opening Doors*, c/o Cynthia Baxter, SC Department of Archives and History, P.O. Box 11669, Columbia, SC 29211, or call 803/734-8611.

Notes from the Center

September-October 1995

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Notes from the Center is published by the National Park Service's National Center for Preservation Technology and Training.

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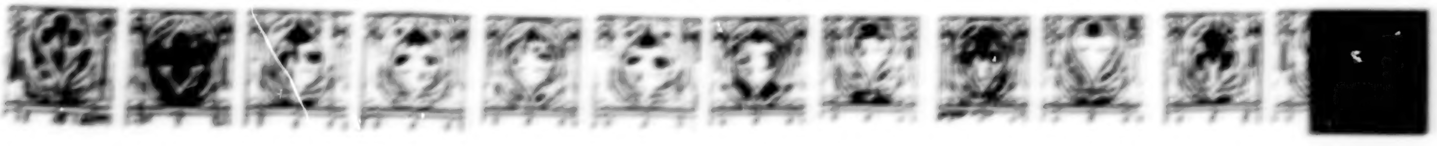

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